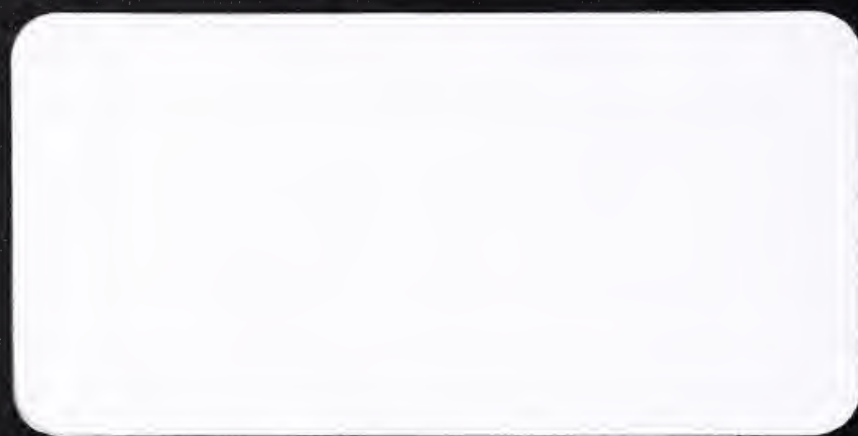


Digital Services  
Lines-of-Business  
Worldwide Markets

INPUT



Digital Services  
Lines-of-Business  
Worldwide Markets

Prepared for  
DEC

May 21, 1992

**INPUT<sup>®</sup>**





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***Worldwide Markets***

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## **I Introduction**

This study was prepared to provide Digital Services group with an estimate of the size of its lines-of-business markets based on INPUT forecasts. The effort was commissioned by Bruce Dishman, Manager Strategic Planning for Digital Services.

To accomplish this study INPUT first developed a translation table between INPUT's standard information services industry market segment definitions and Digital Services lines-of-business definitions. This is presented in Chapter II of this report.

Then INPUT used these definitions, its 1991-1996 Worldwide Information Services Forecast and additional research material where required to translate the INPUT forecasts into the Digital Services lines-of-business markets. This is presented in Chapter III of this report.

- The market forecast translation was done for:
  - United States
  - Western Europe
  - Japan
  - Other Areas (rest of the world market)
  - Worldwide market in total
- Each market translation is presented in a detailed spreadsheet for 1992 and 1996 with a cross tabulation between the Digital Services lines-of-business and INPUT's delivery modes and submodes.
- The market size tables have been provided on disk as well as in printed form.



The documentation provided in this report creates the basis for INPUT to do this translation in future years and to adjust definitions and assumptions as they are changed either by Digital Services group or INPUT.





## II Digital Services Lines-of-Business - Definitions

### A

---

#### Introduction

This document provides the definitions for translating INPUT standard information services industry definitions into Digital Services Lines-of Business. The definition translation is intended to permit INPUT to assist Digital in determining market sizes for the various Digital Services lines-of-business using published INPUT market forecasts.

The initial translation has been prepared based on the 1991 INPUT *Definition of Terms* which is included as Appendix A. Reference is also made to the 1992 INPUT *Definition of Terms* which includes additional market segmentation that will facilitate the market forecast translation in future years. See Appendix B

The forecasts to be used in this translation and market size determination are the INPUT 1991-1996 Worldwide Information Services Forecast. Where required INPUT has provided its estimation of additional segment (lines-of-business) where a direct translation between INPUT market segments and Digital Services lines-of-business is not possible.

Throughout this document INPUT has used the following terms to describe market segments according to INPUT definitions.



- *Delivery Mode* - a major segment of the information services industry. Delivery modes are specific products or services that satisfy a given user need. During 1991 INPUT used eight delivery modes to define the information services industry. For 1992 INPUT has added a ninth delivery mode, Equipment Services. They are listed in Exhibit II-1 and defined in Appendix A and B.
- *Submodes* - each delivery mode is broken down into submodes or components that provide a further delineation of the product or services category. Submodes are listed in Exhibit II-1 where they are relevant to the translation to Digital Services lines-of-business. See appendix A & B for a complete listing and definitions.
- *Hardware or equipment* - INPUT uses the term equipment for computer and communications equipment. Digital uses the term hardware. They are used interchangeably in this study.

Exhibit II-1 provides the framework for the translation of INPUT definitions into Digital Services lines-of-business. Each market segment (intersection between INPUT and Digital definitions which is relevant to the translation is coded by a number. The translations are explained below under the Digital Services lines-of-business headings.

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## EXHIBIT II-1

Digital Services Lines-of-Business
------------------------------------

see attached
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## B

### Hardware Product Services (HPS)

Digital defines HPS as: deliver hardware installation, remedial services and support on all Digital and multi-vendor products and systems through on-site and off-site services.

- Digital includes the entire value of a maintenance contract including repair or replacement component costs.
- Digital includes the value of spare parts sold to customers performing self maintenance.





INPUT has forecasted the customer services market for a number of years. Customer services is defined as the provision of on-site hardware maintenance services by computer manufacturers and third party firms.

- INPUT does not include the cost of spare parts or components used in the services process, but does include the total value of services contracts.
- In 1992 INPUT has renamed this market segment as Equipment Services and included it as the ninth delivery mode within the information services industry.
- See segment marked 1A in Exhibit II-1.

---

## C

### Software Product Services (SPS)

Digital defines SPS as: provide the technical and business expertise required for the replication, distribution, and support services for customer software environment worldwide.

- Support services includes contracted telephone support, annual maintenance fees and upgrade fees.

INPUT has no directly comparable market segment. INPUT includes traditional software maintenance and upgrade services provided to purchasers of software products within its applications and systems software products delivery modes and within the software products submodes of the turnkey systems and systems integration delivery modes.

For this study INPUT has provided a breakout of each software products delivery mode or submode between new product purchases and maintenance/support. See segments marked "2A to 2 J" in Exhibit II-1.

- The maintenance/support market has been included in SPS.
- The new product purchases market is not included within the Digital Services lines-of-business and is not applicable to this study with one exception - Customer Training (CT). See section I.

## D



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## Desktop Services (DTS)

Digital defines DTS as: deliver a broad portfolio of services for multi-vendor desktop hardware, PC LANs plus standard third party applications. Categories of services include: start up services, direct access advisory services, maintenance services and integration services.

INPUT has no corresponding market segment in its 1991 or prior definitions and no market size information is provided as part of this study.

For 1992 INPUT has defined a new submode called Desktop Operations as part of the Systems Operations delivery mode. This definition generally corresponds to the Digital definition and will permit INPUT to provide Digital with market size information from the 1992-1997 INPUT forecast. See segment marked 3A in Exhibit II-1.

---

## E

### Operations Support Services (OSS)

Digital defines OSS as: provide customized solutions to customers in the operations of their information technology solutions. Included are all of the professional services typically related to hardware services such as installation and recovery planning, operations consulting, facilities planning. Also provides data center operations management services.

INPUT's primary corresponding market segment is the Systems Operations delivery mode. For 1991 Systems Operations has two submodes.



- Platform Systems Operations where the vendor manages and operates computer systems, often including telecommunications networks and can be directly translated into OSS. See segment marked 4A in Exhibit II-1.
- Applications Systems Operations where the vendor provides platform systems operations services and is also responsible for maintaining, or developing and maintaining, the client's application systems.

For this study INPUT has segmented the applications development and maintenance portion of the second submode and included it in Applications Project Services. See the segments market 4B in Exhibit II-1.

- The remainder (and majority) of the applications systems operations submode (segment 4B) has been combined with platform systems operations (segment 4A) to provide the size of the OSS line-of-business.
- For this study INPUT has segmented that portion of the consulting submode of the professional services delivery mode directed related to hardware installation, data center design and modification and related services typically provided by the professional staff of the equipment services organization to its clients. This portion has been included in the OSS line-of-business. See the segment market 4D in Exhibit II-1.
- Systems Integration projects often include OSS type services which are included in the other services component of the Systems Integration delivery mode. This component has been included in the OSS market size. See segment marked 4C in Exhibit II-1.
- In 1991 INPUT included network operations expenditures only if part of a broader Systems Operations agreement. No effort has been made to separate the network operations portion of the Systems Operations delivery mode to include it in Network Integration Services for this study. (see Section G).





**F****Applications Project Services (APS)**

Digital defines APS as: design, develop, build and test custom application software and hardware, from scratch or as a modification; provide complementary pull-through systems and products.

APS is a projects and solutions business intended to provide full project services and where appropriate delivery of hardware and software as part of the service including turnkey systems.

INPUT's primary corresponding segments are the software development submode of Professional Services. In addition INPUT includes APS type services within the submodes/components of Turnkey Systems and Systems Integration which have been allocated to APS.

- INPUT's software development submode includes both project based services and skills based services. For this study INPUT has split project services (segment 5A) from other software development services (segment 7B included in DCS).
- Turnkey Systems includes a professional services component that deals with customization and application installation support that has been included within APS in the translation. See segment marked 5B in Exhibit II-1.
- Systems Integration includes a professional services component which primarily corresponds to APS line-of business service. Other than that portion allocated to Digital Consulting Services (see Section H) this component have been included within APS. See segment marked 5C on Exhibit II-1.
- Segment 5D is the application management (and maintenance) services provided as party of an applications systems operations contract. This segment has been included in APS for this study.



The only other noted difference in classification of APS services and systems development is for network development. Digital includes this in NIS. Since no market sizing is being prepared for NIS in this study no attempt was made to size this relatively small segment of software development. (See section G).

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**G**

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**Network Integration Services (NIS)**

Digital defines NIS as: provide multi-vendor network integration and transport integration solutions via planning, design, implementation and management services. Also provide network operation services for wide area and telecommunications networks.

INPUT does not segment the network consulting services within its forecasts and only includes network operation services when they are provided as part of a systems operations (OSS) service agreement.

For this study no effort has been made to size the NIS market according to the Digital Services line-of-business definition.

For 1992 INPUT has added a network operations submode to the Systems Operations delivery mode. This new submode will provide the basis for INPUT to provide Digital a NIS market size in future studies. See segment marked 6A in Exhibit II-1.

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**H**

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**Digital Consulting Services (DCS)**

Digital defines DCS as: provide knowledge transfer consisting of expert advice, analysis, recommendations, process support and facilitation to aid customers with their business, information systems, applications and use of technology.

- Digital Consulting Services includes three categories: enterprise engineering, emerging technologies and information systems management.
- DCS also includes technical skills based consulting services.





INPUT's consulting and a major portion of the software development submodes within the Professional Services delivery mode corresponds to DCS and provides the primary basis for the translation in this study.

- For this study INPUT has included all of the consulting submode (segment 7A) except that portion allocated to OSS (segment 4D) as described in section E.
- That portion of software development not included in APS has been included in DCS (segment 7B). It includes services not provided as part of an applications systems project.

A portion of the professional services component of the Systems Integration delivery mode is characterized by DCS services (segment 7C) and has been included in the marketing sizing for DCS. INPUT has sized the consulting portion of the systems integration professional services component in its U.S. market analysis and has used that work as the basis for the allocation of this component between DCS and APS.

Project Management - Digital includes project management within APS. INPUT generally classifies project management where it is identifiable on a separate basis within consulting. No effort has been made to adjust market sizes for this difference as it is not felt to have significant impact on relative market sizes.

## I

### Customer Training (CT)

Digital defines CT as: provides a portfolio of courseware products and customized services worldwide to meet the additional requirements of customers insuring the successful implementation of Digital solutions. CT includes instructor led services, packaged products (video, text and computer based) and customized training solutions.

INPUT has a directly corresponding submode in the education and training submode of the Professional Services delivery mode. This submode also includes video based training products and has been used to size the CT line-of-business market. See segment marked 8A in Exhibit II-1.

In addition a modest portion of the professional services component of the Systems Integration Delivery mode is education and training services. Where possible this has been included in the CT market size



although it has minimal impact on the overall market size. See segment marked 8B in Exhibit II-1.

INPUT includes a number of cross-industry market sectors within its market structure that include processing services, turnkey systems and applications software products. One of them is Education and Training.

- Education and Training cross -industry sector consists of education and training for information systems professionals delivered as a software product, turnkey system or through processing services; as well as, computer-based training tools for use in the training of any employee.
- For this study the turnkey systems software products (see segment marked 8C) and professional services (see segment marked 8D) submodes as well as the applications software products (see segment 8E) of the Education and Training cross-industry sector have been included in CT.

## **J**

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### **Non-Applicable INPUT Market Segments**

Processing Services (see segment marked 9A) - processing services as offered by traditional service bureaus is not included in the Digital Services lines-of-business.

Turnkey Systems and Systems Integration equipment component (see segment marked 10A and 10B). Equipment is not included in the Digital Services lines-of-business.

Applications Software Products - the new products market (as compared to software maintenance and support) revenues are not included in Digital Services lines-of-business and have been excluded except for Education and Training products. See segments market 2A through 2J in Exhibit II-1.



Network Services - INPUT's Network Services delivery mode includes the network applications and electronic information services submodes. Neither are included in Digital Sciences lines-of-business. See segments 11A and 11B in Exhibit II-1.



INPUT DELIVERY MODES	-----Digital Services Lines-of-Business-----									Not		
	Hardware	Software	Desktop	Operations	Applications	Network	Digital	Customer		Applicable		
	Product	Product	Services	Support	Project	Integration	Consulting	Training				
	Services	Services		Services	Services	Services	Services					
	(HPS)	(SPS)	(DTS)	(OSS)	(APS)	(NIS)	(DCS)	(CT)		Hdw	Soft	Serv
Processing Services												9A
Turnkey Systems												
- Equipment										10A		
- Software Products												
- Systems Soft Prod		2A						8C			2A	
- Appl Soft Prod		2B						8C			2B	
- Professional Services					5B			8D				
Applications Soft Prod												
- Mainframe		2C						8E			2C	
- Minicomputer		2D						8E			2D	
- Workstations/PC		2E						8E			2E	
Systems Operations												
- Platform Sys Oprns				4A								
- Appl Sys Oprns				4B	5D							
- Desktop Services			3A*									
- Network Management						6A*						
Systems Integration												
- Equipment										10B		
- Software Products												
- Systems Soft Prod		2F									2F	
- Appl Soft Prod		2G									2G	
- Professional Services					5C		7C	8B				
- Other				4C								
Professional Services												
- Consulting				4D			7A					
- Software Development					5A		7B					
- Education & Training								8A				
Network Services												
- Electronic Info Svcs												11A
- Network Applications												11B
Systems Soft Prod												
- Mainframe		2H									2H	
- Minicomputer		2I									2I	
- Workstations/PC		2J									2J	
Equipment Services	1A											

\* - Future submodes within INPUT 1992 Definitions.





### III Market Forecast Translation

#### A

#### Introduction

This document describes the factors and assumptions used in the translation of the INPUT submodes to Digital Services Lines-of-Business. Some of the forecast distribution uses market segments not included in normal INPUT forecasts and additional allocation factors have been developed as required for this study and documented below.

The market forecast used for this study is INPUT's *Worldwide Information Services Forecast, 1991-1992* published in April 1992. Digital Equipment Corporation is a subscriber to this study and has access to the full publication through its Market Research Center and Bruce Dishman, Manager of Strategic Planning for Digital Services and the client for this study.

- The information services market forecasts translated are the following:
  - United States
  - Western Europe
  - Japan
  - Rest of the World
  - Worldwide
- The forecast for 1992 and 1996 were translated for each of these markets.

The explanations that follow provide the assumptions used by country/area to translate the various market segments into Digital Services Lines-of-Business. Explanations are only provided where some additional segmentation beyond INPUT's standard market definitions was required.



---

**B**

---

**United States****1. Turnkey Systems****Systems and Applications Software Products -**

- A portion (17%) of these submodes based on the average for the full software products delivery modes was allocated to SPS.
- A portion of the new products segment was allocated to CT based on the US market forecast for the Education and training cross-industry market sector.
- The remainder was assigned to the not applicable category.

**Professional Services -**

- A portion was allocated to CT based on the US market forecast for the Education and Training cross-industry market sector.
- The remainder and majority was assigned to APS.

The same allocation percentages were used for 1992 and 1996.

**2. Software Products**

Both applications and systems software products forecasts were distributed between Software Product Services (SPS) (support, maintenance and upgrades) and new product sales (not applicable) by platform size (submode). Where estimates could be made the distribution varies for 1992 and 1996.

This allocation is based on software pricing and support research conducted in Europe in 1987 and 1991 and revised of the US market. The US market has been a stronger purchaser of applications software products for a number of years and has a greater share of on-going support and upgrade expenditures.



## EXHIBIT III-1

## Software Products - US

## Allocation by Submode 1992 &amp; 1996

	1992		1996	
	SPS %	New %	SPS %	New %
<b>Applications Software Products</b>				
Mainframe	20	80	22	78
Minicomputer	17	83	20	80
Workstation/PC	12	88	15	85
<b>Systems Software Products</b>				
Mainframe	16	84	18	82
Minicomputer	16	84	18	82
Workstation/PC	13	88	16	85

A small portion of the New has been allocated to CT. That portion is based on the Cross-Industry Sector forecast done as part of the US Industry Services Market Analysis Program.

### 3. Systems Operations

Thirty percent (30%) of the Applications Systems Operations submode is believed to represent APS type services and was so allocated. The remaining 70% represents data center and network management services and is allocated to OSS along with the Platform Systems Operations submode.

Over the next few years the applications systems operations submode will grow more quickly than the overall systems operations market. In addition the proportion of the applications systems operations agreement that represents APS type services will also grow to approximately 40% by 1996. Decreasing hardware costs and increased comfort with the applications management concept are factors contributing to this growth.

This change is not currently projected in Western Europe and Japan where systems operations is developing at a slower pace.





#### 4. Systems Integration

##### Applications and Systems Software Products -

- A portion of this submode based on the average for the full software products delivery modes (17%) was allocated to SPS.
- The remainder was assigned to the not applicable category.

##### Professional Services was allocated as follows:

- 9% in 1992 and 12.5% in 1996 was allocated to DCS based on INPUT's US systems integration forecasts for 1991-1996.
- 5% was allocated to CT based on experience in the US systems integration market.
- The remainder was allocated to APS for each year.

#### 5. Professional Services

- Consulting - 15% of the consulting services submode is estimated to represent services tied to data center and customer services consulting requirements. This portion was allocated to OSS. The remainder was allocated to DCS.
- Software development - 35% of the software development submode has been allocated to APS and represent project based services. The remainder, 65%, represents skills based services and is assigned to DCS. The portion representing project based services is less than in Europe because of the more rapid acceptance of systems integration type services in the US.

C

---

Western Europe

For this study Eastern Europe market estimates were removed from the European market sizes reported in INPUT's *Worldwide Information Services Market, 1991-1996*.



## 1. Turnkey Systems

### Systems and Applications Software Products -

- A portion (14%) of these submodes based on the average for the full software products delivery modes was allocated to SPS.
- A portion of the new products segment was allocated to CT based on the US market distribution for the Education and training cross-industry market sector.
- The remainder was assigned to the not applicable category.

### Professional Services -

- A portion was allocated to CT based on the US market distribution for the Education and Training cross-industry market sector.
- The remainder and majority was assigned to APS.

The same allocation percentages were used for 1992 and 1996.

## 2. Software Products

Both applications and systems software products forecasts were distributed between Software Product Services (SPS) (support, maintenance and upgrades) and new product sales (not applicable) by platform size (submode). Where estimates could be made the distribution varies for 1992 and 1996. This allocation is based on software pricing and support research conducted in Europe in 1987 and 1991.



## EXHIBIT III-2

Software Products - Europe  
Allocation by Submode 1992 & 1996

	1992		1996	
	SPS %	New %	SPS %	New %
Applications Software Products				
Mainframe	14	86	18	82
Minicomputer	13	87	17	83
Workstation/PC	11	89	15	85
Systems Software Products				
Mainframe	14	86	18	82
Minicomputer	14	86	18	82
Workstation/PC	10	90	15	85

A portion of the New was allocated to CT based on the Cross-Industry Sector forecast in the United States.

### 3. Systems Operations

Thirty percent (30%) of the Applications Systems Operations submode is believed to represent APS type services and was so allocated. The remaining 70% represents data center and network management services and is allocated to OSS along with the Platform Systems Operations submode.

### 4. Systems Integration

Applications and Systems Software Products -

- A portion of this submode based on the average for the full software products delivery modes was allocated to SPS.
- The remainder was assigned to the not applicable category.

Professional Services was allocated as follows:

- 9% in 1992 and 12.5% in 1996 was allocated to DCS based on INPUT's US systems integration forecasts for 1991-1996.
- 5% was allocated to CT based on experience in the US systems integration market.



- The remainder was allocated to APS for each year.

## 5. Professional Services

- Consulting - INPUT's Customer Services Program - Europe sizes the European market for consulting services provided equipment services firms as \$0.2B for 1992 and \$1.4B for 1996. These amounts have been included in OSS with the remainder of the consulting services segment assigned to DCS. (See section 6 below).
- Software development - Based on estimates of the split between project based services and skills based services for France, Germany, Italy and UK 55% of the software development submode was assigned to DCS (skills based services) and 45% to APS (project based services). The factors for skills based services for the major countries are:

### EXHIBIT III-3

#### Software Development Allocation - Europe Skills Based versus Project Based

Country	Skills Based	Project Based	
		Percent	Percent
France		65%	35%
Germany		35%	65%
Italy		70%	30%
UK		50%	50%

## 6. Equipment Services

INPUT has forecasted a broad set of environmental and non-environmental services within the customer services market that are provided by both information and non-information technology firms.

Only the environmental services provided by IT vendors has been included in the market sizing to maintain consistency with the definitions in Chapter II and the work in the U.S. These amounts, \$0.2B in 1992 and 1.4B in 1996 have been included in OSS as part of the professional services allocation described above.





## EXHIBIT III-4

Customer Services Market - Europe  
Professional Services

Service Category	1992 \$B	1996 \$B
Environmental Services with IT Vendors	0.2	1.4
Non-Environmental Services with IT Vendors	1.8	3.8
Environmental Services with non-IT Vendors	7.8	10.9
Total	9.8	16.1

## D

## Japan

INPUT has been forecasting the information services expenditures in Japan since 1989. Where inadequate detail was available to make the allocations for this project the US market was used.

## 1. Turnkey Systems

## Systems and Applications Software Products -

- A portion (13%) of these submodes based on the average for the full software products delivery modes was allocated to SPS.
- A portion of the new products segment was allocated to CT based on the US market forecast for the Education and training cross-industry market sector.
- The remainder was assigned to the not applicable category.

## Professional Services -

- A portion was allocated to CT based on the US market forecast for the Education and Training cross-industry market sector.
- The remainder and majority was assigned to APS.

The same allocation percentages were used for 1992 and 1996.



## 2. Software Products

Both applications and systems software products forecasts were distributed between Software Product Services (SPS) (support, maintenance and upgrades) and new product sales (not applicable) by platform size (submode). Where estimates could be made the distribution varies for 1992 and 1996.

This allocation is based on software pricing and support research conducted in Europe in 1987 and 1991 and as revised for the US market. The Japanese market for software products has developed more slowly than in Europe and the US. A much higher proportion of proprietary in-house developed software remains in use. This will change more quickly over the next few years.

### EXHIBIT III-5

#### Software Products - Japan

##### Allocation by Submode 1992 & 1996

	1992		1996	
	SPS %	New %	SPS %	New %
<b>Applications Software Products</b>				
Mainframe	12	88	15	85
Minicomputer	12	88	15	85
Workstation/PC	10	90	15	85
<b>Systems Software Products</b>				
Mainframe	14	86	18	82
Minicomputer	14	86	18	82
Workstation/PC	11	89	15	85

A portion of the New was allocated to CT based on the Cross-Industry Sector forecast in the United States.

## 3. Systems Operations

Thirty percent (30%) of the Applications Systems Operations submode is believed to represent APS type services and was so allocated. The remaining 70% represents data center and network management services and is allocated to OSS along with the Platform Systems Operations submode.

No change has been made for 1996.



#### 4. Systems Integration

##### Applications and Systems Software Products -

- A portion of this submode based on the average for the full software products delivery modes (13%) was allocated to SPS.
- The remainder was assigned to the not applicable category.

##### Professional Services was allocated as follows:

- 9% in 1992 and 12.5% in 1996 was allocated to DCS based on INPUT's US systems integration forecasts for 1991-1996.
- 5% was allocated to CT based on experience in the US systems integration market.
- The remainder was allocated to APS for each year.

#### 5. Professional Services

- Consulting - 15% of the consulting services submode is estimated to represent services tied to data center and customer services consulting requirements. This portion was allocated to OSS. The remainder was allocated to DCS.
- Software development - 50% of the software development submode has been allocated to APS and represent project based services. The remainder, 50%, represents skills based services and is assigned to DCS.

No changes were assumed for 1996.

---

## E

### Other Areas

The US, Western Europe and Japan information services markets represent over 90 percent of the total worldwide market. An Other Areas estimate is provided here to permit a cross check with INPUT's worldwide market forecasts and for completeness. No assumptions were made that differ from those used above in developing these market sizes.





The Other Areas estimate was made by subtracting the US, Western Europe and Japan market numbers from the worldwide total.

Other Areas include: Canada, Eastern Europe, Latin America, Asia/Pacific less Japan and Middle East/Africa as defined in INPUT's *Worldwide Information Services Market, 1991-1996*.

## F

### Worldwide

The worldwide market sizes for Digital Services Lines-of-Business as defined by this study were created by comparing the total of the US, Western Europe And Japan markets with the INPUT Worldwide Information Services Forecasts for each delivery mode. The resulting ratios were used to prorate the submodes according to the relative ratios of the combined totals for the three major areas. The ratios are listed in Exhibit III-6.

#### EXHIBIT III-6

Proportion of Worldwide Market Represented by  
Total of US, Western Europe and Japan.  
By Delivery Mode - 1992 & 1996

Delivery Mode	Proportion Of Worldwide	
	1992 %	1996 %
Processing Services	94	94
Turnkey Systems	95	94
Applications Software Products	91	90
Systems Operations	94	94
Systems Integration	93	92
Professional Services	94	94
Network Services	95	94
Systems Software Products	93	92
Equipment Services	90	90
Total Market	93	92



## Appendix A

### Market Forecast Spreadsheets

United States - 1992  
United States - 1996  
Western Europe - 1992  
Western Europe - 1996  
Japan - 1992  
Japan - 1996  
Other Areas - 1992  
Other Areas - 1996  
Worldwide - 1992  
Worldwide - 1996



[illegible]



DECUS2.WR1

Digital Services Lines-of-Business

INPUT to Digital Market Forecast Translation

United States-1992

Digital Services Lines-of-Business														Total	
INPUT DELIVERY MODES	Hardware	Software	Desktop	Operations	Application	Network	Digital	Customer	Not	Applicable	Forecast	INPUT	Forecast		
	Product	Product	Services	Support	Project	Integration	Consulting	Training							
	Services	Services	(DTS)	(OSS)	(APS)	(NIS)	(DCS)	(CT)	Hdwr	Soft	Serv				
	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)		
Professional Services															
- Consulting				0.72	8%		4.07	34%					4.79		
- Software Development					4.09	36%	7.59	63%					11.68		
- Education & Training								2.95	84%				2.95		
Network Services															
- Electronic Info Svcs												8.53	8.53		
- Network Applications												2.26	2.26		
Systems Soft Prod															
- Mainframe		1.46	20%									7.68	9.14		
- Minicomputer		1.04	14%									5.48	6.52		
- Workstations/PC		0.56	8%									3.74	4.30		
Equipment Services															
	16.45	100%											16.45		

\* - Future submodes within INPUT 1992 Definitions.









DECUS6.WR1		Digital Services Lines-of-Business											
		INPUT to Digital Market Forecast Translation											
		United States-1996											
		-----Digital Services Lines-of-Business-----											
INPUT DELIVERY MODES		Hardware	Software	Desktop	Operations	Application	Network	Digital	Customer	Not	Total		
		Product	Product	Services	Support	Project	Integration	Consulting	Training	Applicable	INPUT		
		Services	Services	(DTS)	(OSS)	(APS)	(NIS)	Services	(CT)	Hdwr	Soft	Forecast	
		(HPS)	(SPS)	\$B	%	\$B	%	\$B	%	\$B	\$B	\$B	\$B
		\$B	%	\$B	%	\$B	%	\$B	%	\$B	\$B	\$B	\$B
Professional Services													
- Consulting					1.18	8%		6.67	37%				7.85
- Software Development						5.44	28%	10.09	57%				15.53
- Education & Training									4.52	80%			4.52
Network Services													
- Electronic Info Svcs											15.62		15.62
- Network Applications											4.44		4.44
Systems Soft Prod													
- Mainframe			2.40	18%						10.95			13.35
- Minicomputer			1.71	13%						7.79			9.50
- Workstations/PC			1.42	11%						7.43			8.85
Equipment Services													
		22.53		100%									22.53

\* - Future submodes within INPUT 1992 Definitions.







Digital Services Lines-of-Business  
INPUT to Digital Market Forecast Translation  
Western Europe-1992

-----Digital Services Lines-of-Business-----														-----	
INPUT DELIVERY MODES	Hardware	Software	Desktop	Operations	Application	Network	Digital	Customer	Not	Total					
	Product	Product	Services	Support	Project	Integration	Consulting	Training	Applicable	INPUT					
	Services	Services	(DTS)	Services	Services	Services	Services	(CT)	Hdwr	Soft	Forecast				
	(HPS)	(SPS)		(OSS)	(APS)	(NIS)	(DCS)			Serv					
	\$B	%	\$B	%	\$B	%	\$B	%	\$B	\$B	\$B	\$B	\$B		
=====															
Professional Services															
- Consulting				0.20	11%		3.67	23%						3.87	
- Software Development					10.03	64%	12.27	76%						22.30	
- Education & Training								2.94	90%					2.94	
Network Services															
- Electronic Info Svcs													5.55	3.74	
- Network Applications													3.74	1.82	
Systems Soft Prod															
- Mainframe		0.90	24%									5.53		6.43	
- Minicomputer		0.62	17%									3.82		4.44	
- Workstations/PC		0.31	8%									2.80		3.11	
Equipment Services	15.80		100%												15.80

\* - Future submodes within INPUT 1992 Definitions.





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DECEUR6.WR1

Digital Services Lines-of-Business  
INPUT to Digital Market Forecast Translation  
Western Europe-1996

-----Digital Services Lines-of-Business-----														-----	
	Hardware	Software	Desktop	Operations	Application	Network	Digital	Customer	Not	Total					
	Product	Product	Services	Support	Project	Integration	Consulting	Training	Applicable	INPUT					
	Services	Services		Services	Services	Services	Services			Forecast					
	(HPS)	(SPS)	(DTS)	(OSS)	(APS)	(NIS)	(DCS)	(CT)	Hdwr	Soft	Serv				
	\$B	%	\$B	%	\$B	%	\$B	%	\$B	\$B	\$B				
=====															
Professional Services															
- Consulting				1.40	29%		5.73	20%			7.13				
- Software Development				17.86	61%		21.84	78%			39.70				
- Education & Training								5.07	88%		5.07				
Network Services															
- Electronic Info Svcs										6.25	3.74				
- Network Applications										5.34	1.82				
Systems Soft Prod															
- Mainframe			1.33	16%					6.06		7.39				
- Minicomputer			1.28	16%					5.81		7.09				
- Workstations/PC			1.05	13%					5.95		7.00				
Equipment Services															
	17.10	100%									17.10				

\* - Future subnodes within INPUT 1992 Definitions.



Digital Services Lines-of-Business  
INPUT to Digital Market Forecast Translation  
Japan-1992

-----Digital Services Lines-of-Business-----															-----		
INPUT DELIVERY MODES	Hardware	Software	Desktop	Operations	Application	Network	Digital	Customer	Not		Applicable		Forecast		-----		
	Product	Product	Services	Support	Project	Integration	Consulting	Training	Applicable		Applicable		Forecast		-----		
	Services	Services	Services	Services	Services	Services	Services	Services	Hdwr		Soft		Serv		-----		
	(HPS)	(SPS)	(DTS)	(OSS)	(APS)	(NIS)	(DCS)	(CT)	\$B	%	\$B	%	\$B	%	-----		
	\$B	%	\$B	%	\$B	%	\$B	%	\$B	%	\$B	%	\$B	%	-----		
Total Market	8.62	100%	0.81	100%	3.61	100%	7.26	100%	1.83	100%	2.73	5.51	7.44	45.09			
Processing Services																	
Turnkey Systems																	
- Equipment																	
- Software Products											1.38			1.38			
- Systems Soft Prod			0.02	2%				0.00	0%			0.21		0.23			
- Appl Soft Prod			0.19	23%				0.03	2%			1.21		1.43			
- Professional Services					1.18	16%		0.02	1%					1.20			
Applications Soft Prod																	
- Mainframe			0.11	14%				0.01	1%			0.81		0.93			
- Minicomputer			0.08	10%				0.02	1%			0.60		0.70			
- Workstations/PC			0.07	9%				0.02	1%			0.61		0.70			
Systems Operations																	
- Platform Sys Oprns					2.04	57%								2.04			
- Appl Sys Oprns					0.95	26%	0.40	5%						1.35			
- Desktop Services																	
- Network Management																	
Systems Integration																	
- Equipment																	
- Software Products											1.35			1.35			
- Systems Soft Prod			0.01	1%								0.04		0.05			
- Appl Soft Prod			0.05	6%								0.27		0.32			
- Professional Services					1.28	18%	0.25	3%	0.08	4%				1.61			
- Other					0.16	4%								0.16			



Digital Services Lines-of-Business  
INPUT to Digital Market Forecast Translation

Japan-1992

Digital Services Lines-of-Business																					
INPUT DELIVERY MODES	Hardware		Software		Desktop Services		Operations Support Services		Application Project Services		Network Integration Services		Digital Consulting Services		Customer Training		Not Applicable		Total		
	Product		Product		Services		Support		Services		Project		Integration		Training		Applicable		INPUT		
	Services		Services		(DTS)		(OSS)		(APS)		(NIS)		(DCS)		(CT)		Hdwr		Soft Serv		
	(\$B)	%	(\$B)	%	(\$B)	%	(\$B)	%	(\$B)	%	(\$B)	%	(\$B)	%	(\$B)	%	(\$B)	%	(\$B)	%	\$B
Professional Services																					
- Consulting							0.46	13%					2.58	36%							3.04
- Software Development									4.42	61%			4.43	61%							8.85
- Education & Training															1.65	90%					1.65
Network Services																					
- Electronic Info Svcs																			1.09		1.09
- Network Applications																			0.27		0.27
Systems Soft Prod																					
- Mainframe																				0.88	1.02
- Minicomputer																				0.52	0.61
- Workstations/PC																				0.36	0.41
Equipment Services																					
												</									

\* - Future submodes within INPUT 1992 Definitions.





Digital Services Lines-of-Business  
INPUT to Digital Market Forecast Translation  
Japan-1996

INPUT DELIVERY MODES	-----Digital Services Lines-of-Business-----														-----		
	Hardware	Software	Desktop	Operations	Application	Network	Digital	Customer	Not	Applicable	Soft	Serv	Forecast	Total			
	Product	Product	Services	Support	Project	Integration	Consulting	Training						INPUT			
	Services	Services	(DTS)	(OSS)	Services	(NIS)	(DCS)	(CT)	Hdwr	Soft							
	(HPS)	(SPS)	\$B	%	\$B	%	\$B	%	\$B	\$B	\$B	\$B	\$B	\$B			
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Total Market	12.63	1.73	7.34	100% 15.88	100%	15.12	100% 3.32	100%	4.79	9.66	11.77	82.24					
Processing Services																	
Turnkey Systems																	
- Equipment																	
- Software Products									2.01								
- Systems Soft Prod		0.04	2%							0.29							
- Appl Soft Prod		0.27	16%							1.75							
- Professional Services				2.35	15%												
Applications Soft Prod																	
- Mainframe		0.21	12%							1.21							
- Minicomputer		0.18	10%							0.99							
- Workstations/PC		0.32	18%							1.79							
Systems Operations																	
- Platform Sys Oprns				4.23	58%												
- Appl Sys Oprns				1.96	27%	0.84	5%										
- Desktop Services																	
- Network Management																	
Systems Integration																	
- Equipment																	
- Software Products									2.78								
- Systems Soft Prod		0.01	1%							0.07							
- Appl Soft Prod		0.05	3%							0.42							
- Professional Services				3.24	20%												
- Other				0.23	3%												



Digital Services Lines-of-Business													
INPUT to Digital Market Forecast Translation													
Japan-1996													
Digital Services Lines-of-Business													
INPUT DELIVERY MODES	Hardware	Software	Desktop	Operations	Application	Network	Digital	Customer	Not	Applicable	Forecast	Total	
	Product	Product	Services	Support	Project	Integration	Consulting	Training				INPUT	
	Services	Services	Services	Services	Services	Services	Services						
	(HPS)	(SPS)	(DTS)	(OSS)	(APS)	(NIS)	(DCS)	(CT)	Hdwr	Soft	Serv		
	\$B	%	\$B	%	\$B	%	\$B	%	\$B	\$B	\$B	\$B	\$B
Professional Services													
- Consulting				0.92	13%		5.18	34%				6.10	
- Software Development					9.45	60%	9.45	63%				18.90	
- Education & Training								2.95	89%			2.95	
Network Services													
- Electronic Info Svcs											2.41	2.41	
- Network Applications											0.59	0.59	
Systems Soft Prod													
- Mainframe		0.28	16%							1.25		1.53	
- Minicomputer		0.17	10%							0.75		0.92	
- Workstations/PC		0.20	12%							1.14		1.34	
Equipment Services													
	12.63	100%										12.63	

\* - Future submodes within INPUT 1992 Definitions.



Digital Services Lines-of-Business  
INPUT to Digital Market Forecast Translation  
Other Areas - 1992

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DECOT2.WR1

Digital Services Lines-of-Business

INPUT to Digital Market Forecast Translation

Other Areas - 1992

Digital Services Lines-of-Business													
INPUT to Digital Market Forecast Translation													
Other Areas - 1992													
Digital Services Lines-of-Business													
INPUT DELIVERY MODES	Hardware	Software	Desktop	Services	Operations	Application	Network	Digital	Customer	Training	Not	Applicable	Total
	Product	Product	Product	Product	Product	Product	Product	Product	Product	Product	Product	Product	Product
	(HPS)	(SPS)	(DTS)	(OSS)	(APS)	(NIS)	(DCS)	(CT)	(Hdwr)	(Soft)	(Serv)	(HPS)	(HPS)
	\$B	%	\$B	%	\$B	%	\$B	%	\$B	%	\$B	\$B	\$B
Professional Services													
- Consulting				0.08	9%			0.61	0%				0.69
- Software Development					1.09	51%		1.43	0%				2.53
- Education & Training								0.44	83%				0.44
Network Services													
- Electronic Info Svcs											0.88		0.88
- Network Applications											0.36		0.36
Systems Soft Prod													
- Mainframe		0.19	19%									1.05	1.23
- Minicomputer		0.13	13%									0.73	0.86
- Workstations/PC		0.07	7%									0.51	0.58
Equipment Services													
	4.54	100%											4.54

\* - Future submodes within INPUT 1992 Definitions.









Digital Services Lines-of-Business														
INPUT to Digital Market Forecast Translation														
Other Areas - 1996														
-----Digital Services Lines-of-Business-----														
INPUT DELIVERY MODES	Hardware	Software	Desktop	Operations	Application	Network	Digital	Customer	Not		Total			
	Product	Product	Services	Support	Project	Integration	Consulting	Training	Applicable		INPUT			
	Services	Services	Services	Services	Services	Services	Services	Services	Hdwr		Forecast			
	(HPS)	(SPS)	(DTS)	(OSS)	(APS)	(NIS)	(DCS)	(CT)	Soft		Serv			
	\$B	%	\$B	%	\$B	%	\$B	%	\$B	%	\$B	\$B	\$B	\$B
=====														
Professional Services													7.44	
- Consulting				0.24	0%		1.21	0%					1.46	
- Software Development					2.26	0%	2.86	0%					5.12	
- Education & Training								0.87	0%				0.87	
Network Services													0.00	
- Electronic Info Svcs											1.45		0.00	
- Network Applications											0.62		0.00	
Systems Soft Prod													5.21	
- Mainframe		0.37	16%								1.67		2.04	
- Minicomputer		0.29	13%								1.31		1.60	
- Workstations/PC		0.24	11%								1.33		1.57	
Equipment Services	5.81	100%											5.81	
=====														

\* - Future submodes within INPUT 1992 Definitions.



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DECW2.WR1

Digital Services Lines-of-Business  
INPUT to Digital Market Forecast Translation  
Worldwide - 1992

-----Digital Services Lines-of-Business-----														-----	
INPUT DELIVERY MODES	Hardware	Software	Desktop	Operations	Application	Network	Digital	Customer	Not						Total
	Product	Product	Services	Support	Services	Integration	Consulting	Training	Applicable						INPUT
	Services	Services	(DTS)	(OSS)	(APS)	(NIS)	Services	(CT)	Hdwr	Soft	Serv				Forecast
	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)	(\$B)
=====															
Professional Services															
- Consulting				1.46	9%		10.93	29%							12.39
- Software Development					19.63	54%	25.72	69%							45.36
- Education & Training								7.98	87%						7.98
Network Services															
- Electronic Info Svcs											16.05				13.36
- Network Applications											6.63				4.35
Systems Soft Prod															
- Mainframe		2.69	21%							15.14					17.82
- Minicomputer		1.88	15%							10.55					12.43
- Workstations/PC		0.99	8%							7.41					8.40
Equipment Services															
	45.41		100%												45.41
=====															

\* - Future subnodes within INPUT 1992 Definitions.





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DECW6.WR1

Digital Services Lines-of-Business  
INPUT to Digital Market Forecast Translation  
Worldwide - 1996

-----Digital Services Lines-of-Business-----														-----	
INPUT DELIVERY MODES	Hardware	Software	Desktop	Operations	Application	Network	Digital	Customer	Not		Applicable		Forecast		
	Product	Product	Services	Support	Project	Integration	Consulting	Training	Applicable		Applicable		Forecast		
	Services	Services	(DTS)	Services	Services	(NIS)	Services	(CT)	Hdwr	Soft	Serv				
	(HPS)	(SPS)	%	%	%	%	%	%	\$B	\$B	\$B	\$B	\$B		
	\$B	%	\$B	%	\$B	%	\$B	%	\$B	%	\$B	%	\$B		
Professional Services														115.19	
- Consulting				3.74	13%		18.79	29%						22.54	
- Software Development					35.01	51%	44.24	68%						79.25	
- Education & Training								13.41	85%					13.41	
Network Services															
- Electronic Info Svcs													25.73	34.65	
- Network Applications													10.99	24.28	
														10.37	
Systems Soft Prod														62.18	
- Mainframe		4.38	17%									19.93		24.31	
- Minicomputer		3.45	13%									15.66		19.11	
- Workstations/PC		2.91	11%									15.85		18.76	
Equipment Services	58.07		100%											58.07	

\* - Future submodes within INPUT 1992 Definitions.







